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1989 FACTS

YEARBOOK

A summary of ferrous, nonferrous metals and paper statistics

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SUMMARY

Ferrous, Nonferrous Base Metals (short tons)

Aluminum

Year	Apparent Scrap Consumption*	Scrap Exports	Scrap Market Share
1979	1,705,631	243,921	24%
1980	1,693,633	376,288	28%
1981	2,012,423	184,435	32%
1982	1,978,888	170,611	33%
1983	2,107,630	241,926	31%
1984	2,092,891	241,200	29%
1985	2,070,719	356,478	31%
1986	2,075,140	378,788	31%
1987	2,042,116	406,210	30%
1988	2,339,102	535,583	33%
1989	2,396,411	726,094	36%

Copper

Year	Apparent Scrap Consumption*	Scrap Exports	Scrap Market Share
1979	1,668,838	188,576	46%
1980	1,545,555	210,518	46%
1981	1,521,534	161,187	49%
1982	1,268,727	160,951	48%
1983	1,155,098	150,724	40%
1984	1,191,350	207,520	40%
1985	1,222,652	308,827	40%
1986	1,208,517	316,741	40%
1987	1,291,299	324,372	41%
1988	1,392,521	352,431	43%
1989	1,386,873	405,048	43%

Iron and Steel (000 s.t.)

Year	Apparent Scrap Consumption*	Scrap Exports	Scrap Market Share
1979	46,963	9,595	30%
1980	40,954	9,693	33%
1981	41,981	5,575	31%
1982	27,994	6,563	33%
1983	34,219	7,369	36%
1984	36,060	9,235	35%
1985	38,818	9,612	39%
1986	38,004	11,380	42%
1987	44,808	10,039	45%
1988	49,613	9,491	45%
1989	45,934	11,398	43%

Lead

Year	Apparent Scrap Consumption*	Scrap Exports	Scrap Market Share
1979	883,000	131,999	54%
1980	745,000	131,893	58%
1981	707,000	65,498	51%
1982	630,000	57,047	49%
1983	550,000	56,127	42%
1984	698,000	49,710	53%
1985	679,000	66,082	52%
1986	689,000	68,340	52%
1987	783,000	57,785	57%
1988	812,000	90,064	58%
1989	891,000	57,209	61%

Stainless Steel

Year	Apparent Scrap Consumption*	Scrap Exports	Scrap Market Share
1979	406,000	100,011	30%
1980	363,000	105,795	32%
1981	431,000	56,678	37%
1982	406,000	131,338	45%
1983	480,000	80,299	42%
1984	549,000	163,542	44%
1985	557,000	179,583	45%
1986	543,000	164,120	46%
1987	644,000	168,601	45%
1988	790,000	243,344	50%
1989	659,000	291,607	45%

Zinc

Year	Apparent Scrap Consumption*	Scrap Exports	Scrap Market Share
1979	224,546	31,029	20%
1980	201,764	32,565	23%
1981	223,858	29,571	24%
1982	188,272	18,595	24%
1983	226,044	23,085	25%
1984	264,203	31,890	28%
1985	240,803	42,544	23%
1986	165,507	69,659	15%
1987	249,081	90,815	21%
1988	212,570	104,825	18%
1989	227,152	107,560	19%

*Apparent scrap consumption is a descriptive term. For purposes of analyses, refer to the individual metals for a complete definition.

ALUMINUM

A light, silvery-white, ductile metal with high electrical conductivity and good resistance to corrosion. Symbol Al; melting point, 660.2° C. Aluminum is the basis for many light alloys.

Aluminum: 10 Year Review (short tons)

Year	Primary Production	Old & New Scrap Consumed	Imports metal and scrap	Exports	Stocks (includes scrap)	Stock Changes	Apparent Aluminum Consumption[1]	Scrap Market Share[2]
1979	5,023,000	1,705,031	839,966	773,385	2,555,920	− 191,058	6,985,670	24.4%
1980	5,130,000	1,693,633	713,040	1,483,211	2,538,002	− 17,918	6,071,380	27.8%
1981	4,948,000	2,012,423	935,162	867,174	3,303,325	+ 765,323	6,263,088	32.1%
1982	3,609,000	1,978,888	968,056	824,469	3,099,740	− 203,585	5,935,060	33.3%
1983	3,696,000	2,107,630	1,202,814	855,081	2,504,616	− 595,124	6,746,487	31.2%
1984	4,518,000	2,092,891	1,628,310	808,882	2,650,000	+ 145,384	7,284,935	28.8%
1985	3,857,000	2,070,719	1,565,204	1,000,752	2,350,000	− 300,000	6,792,171	30.5%
1986	3,348,000	2,075,140	2,167,857	830,022	2,240,000	− 110,000	6,733,055	30.9%
1987r	3,685,000	2,042,116	2,038,519	1,010,765	2,087,757	− 147,243	6,902,113	29.6%
1988r	4,348,000	2,339,102	1,785,942	1,374,581	2,098,779	+ 11,022	7,087,241	33.0%
1989	4,442,000	2,396,411	1,620,396	1,778,026	2,021,637	− 77,142	6,757,923	35.5%

Source: U.S. Bureau of Mines, Bureau of the Census

[1] Apparent Aluminum Consumption: Defined as refined production + old and new scrap consumed + net trade + stock change

[2] Scrap Market Share: Calculated from purchased scrap (column 3) divided by apparent aluminum consumption (column 8)

r = revised

Used Beverage Can (UBC) Consumption (000 pounds)

	1983	1984	1985	1986	1987	1988	1989
Producers	1,053,000	1,167,700	1,193,775	1,163,931	1,243,000	1,426,000[1]	1,611,000[1]
Secondary smelters, Other consumers	24,000	25,000	24,225	14,784	30,700		
Exporters	3,000	3,800	13,814	13,480	60,500	78,600	76,700
Total	1,080,000	1,196,500	1,231,814	1,192,195	1,335,000	1,505,000	1,688,000
Recycling rate	50.0%	51.3%	50.5%	47.1%	50.5%	54.6%	60.8%
Cans per pound	23.0	25.9	26.6	27.0	27.4	28.3	29.3
Cans shipped (Billions of Cans)	56.7	60.452	64,908	68,343	72,458	77,886	81,350

Source: ISRI

[1] Producers, secondary smelters, other consumers combined

U.S. Consumption of Purchased Old & New Aluminum Scrap (short tons)

All Scrap Consumed: New Scrap	1982 Consumption	1983 Consumption	1984 Consumption	1985 Consumption	1986 Consumption	1987 Consumption	1988 Consumption	1989 Consumption
Solids	702,300	759,026	744,754	713,802	771,379	737,251	774,476	701,045
Borings and turnings	165,617	184,675	185,117	165,002	179,540	162,062	144,585	166,770
Dross and skimmings	118,008	121,649	107,231	95,132	66,811	45,553	35,012	34,131
Other	53,203	55,531	67,107	91,677	102,695	139,993	253,415	271,955
Total new scrap	1,039,128	1,120,881	1,104,209	1,065,613	1,130,425	1,084,859	1,207,489	1,173,901
Old Scrap								
Castings, sheet, clippings	221,808	265,807	254,659	221,292	244,213	249,485	424,011	405,247
Aluminum-copper radiators	21,627	24,398	22,604	18,678	18,303	13,879	15,624	11,527
Aluminum cans	563,726	574,182	598,306	628,851	552,258	583,756	706,873	718,219
Other	45,000	32,347	33,125	25,023	36,347	29,008	36,169	39,444
Total old scrap	852,161	896,734	908,694	893,844	851,121	876,128	1,182,676	1,174,451
Sweated pig	87,599	90,015	79,988	111,262	93,594	81,129	73,268	48,073
Total all scrap	1,978,888	2,107,630	2,092,891	2,070,719	2,075,140	2,042,116	2,339,102	2,396,411

Source: U.S. Bureau of Mines

U.S. Scrap Exports of Aluminum by Country (short tons)

Country	1986	1987	1988	1989
Belgium	4,186	1,381	4,512	5,347
Brazil	3,819	2,176	822	4,015
Canada	16,047	23,143	33,829	40,624
France	512	2,455	14,125	18,212
Germany, Federal Republic of	5,854	3,414	4,718	10,658
India	77	—	—	—
Italy	7,824	3,706	9,452	14,330
Japan	262,533	290,251	296,349	371,655
Korea, Republic of	2,127	6,958	39,311	15,414
Mexico	28,223	23,889	32,925	29,221
Netherlands	5,621	5,367	14,495	12,680
Republic of SAF	—	—	1,879	499
Spain	1,169	708	364	1,424
Taiwan	39,439	37,763	72,557	83,145
United Kingdom	749	1,043	2,197	5,646
Other	608	3,956	8,048	20,038
Total[1]	378,788	406,210	535,583	726,094

Source: Department of Commerce

Aluminum U.S. Transaction Price (cents per pound)

Month	1987	1988	1989
January	55.1	90.8	108.9
February	60.6	97.9	101.0
March	63.6	109.2	97.5
April	65.6	109.6	97.6
May	70.2	118.8	99.2
June	73.1	129.4	89.3
July	75.5	124.7	81.5
August	81.6	126.3	82.3
September	82.4	113.7	79.1
October	85.1	106.4	80.3
November	81.1	108.9	76.3
December	84.6	111.2	74.2
Average	73.3	112.2	88.9

Source: Metals Week

Aluminum LME Cash (cents per pound)

Month	1987	1988	1989
January	53.1	90.8	108.8
February	58.2	97.0	99.0
March	62.0	114.6	94.1
April	63.5	113.8	96.4
May	64.0	135.5	102.5
June	66.8	162.3	86.8
July	75.0	117.1	79.4
August	82.1	122.5	81.6
September	79.2	108.3	77.9
October	89.0	104.7	82.6
November	76.2	108.0	78.7
December	82.7	115.8	74.1
Average	70.8	115.4	88.5

Source: Metals Week

Scrap Aluminum Clipping[1] Price (cents per pound)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1979	31.50	32.97	36.05	40.69	45.55	44.79	43.69	42.40	41.55	43.59	44.90	45.50	41.14
1980	48.64	51.18	56.35	51.00	46.88	43.17	45.05	48.02	48.50	48.50	47.32	44.50	48.26
1981	44.50	42.92	42.50	42.41	40.20	38.50	38.50	38.50	37.69	35.77	33.18	31.00	38.81
1982	30.50	30.50	29.48	28.00	27.80	24.98	24.50	24.50	24.50	24.50	23.10	22.50	26.24
1983	23.12	25.50	27.50	27.50	31.02	33.50	35.00	39.24	41.50	41.50	40.85	40.50	33.89
1984	41.83	42.50	45.23	47.45	43.50	41.21	38.64	36.11	33.39	29.76	27.50	29.44	38.05
1985	31.25	30.00	30.00	30.00	28.82	26.50	26.31	24.50	24.50	24.50	24.50	24.50	27.12
1986	25.59	27.56	29.69	30.86	29.50	28.93	28.50	28.50	28.50	28.50	28.50	28.50	28.59
1987	28.50	28.50	31.23	34.50	36.10	37.50	39.14	43.07	43.50	47.32	47.50	47.50	38.70
1988	60.65	64.35	73.89	74.74	76.21	79.73	79.65	80.50	79.98	73.98	73.66	74.69	74.34
1989	75.50	72.97	72.11	70.80	70.68	67.36	58.61	53.67	57.15	54.00	53.00	51.65	63.13

Source: American Metal Market
[1] Clipping: Defined as segregated low copper-containing industrial scrap

Cu

COPPER

A reddish metallic element. Symbol Cu; melting point, 1,083° C; malleable; ductile; high electrical and thermal conductivity. Copper is the basis for brass, bronze, aluminum bronze and many other alloys.

Copper: 10 Year Review
(short tons)

Year	Refined Production	Purchased Old & New Scrap Recoverable	Import (refined only)	Export	Refined Stocks (at year end)	Stock Change	Apparent Copper Consumption[1]	Scrap Market Share[2]
1979	1,671,809	1,668,838	237,172	81,214	70,547	− 98,105	3,594,710	46.4%
1980	1,339,502	1,545,555	470,625	15,971	54,013	− 16,534	3,356,245	46.0%
1981	1,701,970	1,521,534	364,448	26,893	534,615	+ 480,602	3,080,457	49.3%
1982	1,352,277	1,268,727	284,877	33,684	767,201	+ 232,586	2,639,611	48.0%
1983	1,303,018	1,155,098	506,582	89,724	762,792	− 4,409	2,879,383	40.1%
1984	1,283,739	1,191,350	490,192	100,766	621,697	− 141,095	3,005,610	39.6%
1985	1,165,313	1,222,652	416,366	41,818	342,815	− 278,882	3,041,395	40.3%
1986	1,182,999	1,208,517	553,334	13,726	248,017	− 94,798	3,025,922	40.0%
1987r	1,241,970	1,291,299	517,154	− 10,135	123,458	− 124,559	3,164,847	40.8%
1988r	1,549,856	1,392,521	365,601	64,292	109,128	− 14,330	3,258,016	42.7%
1989	1,627,913	1,386,873	330,811	143,507	116,844	+ 7,716	3,194,374	43.4%

Source: U.S. Bureau of Mines

[1] Apparent Copper Consumption: Defined as refined production + old & new scrap recoverable + net refined trade + refined stock change

[2] Scrap Market Share: Calculated from old & new scrap recoverable (column 3) divided by apparent copper consumption (column 8)

r – Revised

Consumption of Purchased Copper Scrap in the U.S. (short tons—gross weight)

Year	New Scrap	Old Scrap	Total Scrap Consumption
1979	1,370,039	915,278	2,285,317
1980	1,168,245	877,007	2,040,252
1981	1,155,853	856,469	2,012,322
1982	942,768	727,048	1,669,816
1983	889,821	633,135	1,522,955
1984	949,241	630,858	1,580,099
1985	926,876	629,328	1,556,204
1986	972,353	675,595	1,647,948
1987	996,652	742,925	1,739,577
1988'	—1,074,650	710,227	1,784,877
1989	1,040,021	742,132	1,782,153

Source: U.S. Bureau of Mines
' = Revised

U.S. Exports of Copper Scrap by Country (short tons)

Country	1984	1985	1986	1987	1988	1989
Belgium-Luxembourg	5,632	17,342	9,736	10,103	12,707	10,457
Canada	46,040	44,698	37,779	35,344	58,181	75,024
France	280	409	312	106	823	896
Germany, Federal Republic of	7,266	37,468	14,710	13,267	33,881	58,496
Hong Kong	704	2,874	7,141	4,237	1,806	2,822
India	10,399	16,338	19,044	13,437	16,755	29,372
Italy	3,535	17,358	35,194	13,966	3,067	5,715
Japan	47,779	42,155	42,154	43,553	36,768	42,969
Korea, Republic of	22,950	28,976	29,472	39,594	70,090	68,086
Mexico	17,571	17,746	6,667	19,844	23,799	24,961
Netherlands	1,747	8,709	3,531	1,292	2,248	7,125
Spain	3,450	12,930	14,785	15,765	14,857	5,546
Sweden	3,046	2,227	2,622	1,739	1,796	2,318
Switzerland	551	1,198	418	181	75	131
Taiwan	33,455	43,880	75,848	91,969	61,606	40,064
United Kingdom	1,169	6,597	6,125	3,884	5,521	7,378
Other	1,946	7,919	11,202	16,091	8,451	23,688
Total	207,520	308,825	316,741	324,372	352,431	405,048

Source: Department of Commerce

Average Copper Price in the U.S.—Comex 1st Position (cents per pound)

Month	1979	1980	1981	1982	1983	1984[1]	1985[1]	1986[1]	1987[1]	1988[1]	1989[1]
January	71.77	119.25	85.00	72.10	71.30	62.30	59.15	65.29	60.75	123.21	152.21
February	85.05	129.80	81.27	70.85	76.50	64.22	60.57	63.86	61.73	99.73	134.20
March	90.57	101.85	81.80	67.87	73.65	67.91	60.09	66.02	63.57	103.92	142.88
April	90.35	89.95	82.92	68.47	76.32	68.46	63.62	63.80	82.37	97.50	138.26
May	85.60	90.15	79.67	68.57	78.80	63.40	62.95	62.72	66.46	99.27	120.73
June	81.45	88.35	78.10	58.15	75.30	61.04	60.15	62.57	69.89	108.97	109.45
July	81.95	97.40	78.15	63.20	76.70	58.60	60.78	58.94	76.19	98.78	107.24
August	90.05	91.70	79.62	66.47	72.80	59.35	60.19	57.59	77.63	96.21	121.77
September	98.87	93.62	76.37	62.85	69.37	57.06	59.57	60.71	80.99	111.24	131.97
October	101.00	92.45	75.15	62.20	64.52	56.34	60.97	59.19	83.04	133.48	125.53
November	97.50	91.30	73.77	64.60	64.35	59.63	60.64	58.93	103.92	147.08	111.45
December	103.85	84.05	73.65	67.30	64.02	57.54	63.18	60.17	127.49	155.81	103.25
Average	89.83	97.49	78.79	66.05	71.97	61.32	60.99	61.65	77.84	114.60	124.91

Source: Compiled by Commodity Exchange Inc.
[1] Metals Week

Average Copper Price on the London Metal Exchange[1]—Cathode (cents per pound)

Month	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989[1]
January	73.83	114.00	88.05	72.84	68.86	61.65	61.19	63.28	59.27	115.93	153.87
February	87.33	126.71	81.25	72.20	73.09	64.09	62.79	62.96	60.46	102.30	140.37
March	92.40	100.45	81.94	68.27	71.13	67.79	62.91	65.26	62.36	103.51	147.99
April	95.29	90.96	81.90	68.60	74.58	69.36	67.11	64.93	63.85	100.00	141.36
May	85.91	90.79	78.38	68.62	77.50	64.49	67.67	63.29	66.27	100.77	124.20
June	82.57	88.26	76.53	58.32	74.87	62.10	64.31	63.20	69.85	104.95	115.44
July	80.06	95.80	75.85	63.86	74.61	60.64	64.73	58.44	76.68	96.77	113.57
August	86.18	91.09	80.90	63.41	72.14	61.14	62.40	57.52	79.51	96.18	125.23
September	92.04	90.30	77.45	62.39	68.77	58.94	60.74	59.43	81.86	105.13	130.80
October	92.61	89.70	75.29	62.47	63.58	57.87	61.57	58.27	87.63	127.65	129.74
November	92.63	89.00	74.55	62.15	61.88	61.43	60.70	57.71	109.67	143.82	117.50
December	97.00	83.21	74.70	63.74	63.06	60.30	62.13	58.68	123.40	153.94	109.67
Average	88.25	96.09	78.98	65.57	70.29	62.48	63.19	61.08	77.73	112.60	129.14

Source: Metals Week
[1] Based on average monthly rates of exchange. LME cash price (Standard Grade)

Fe

FERROUS METAL

A metal with iron as its major constituent. Relatively heavy, usually magnetic, and in most of its forms, quite strong. Symbol Fe; melting point, 1,535° C.

Scrap Iron and Steel: 10 Year Review
(000 net tons)

Year	Receipts From Dealers & Other Sources	Receipts From Other Own Company	Scrap Shipments	Net Domestic Scrap Consumption[1]	Raw Steel Production	Foundry Shipments	Steel Castings Shipments	Apparent Steel Consumption[2]	Scrap Market Share[3]
1979	43.901	9.290	6.228	46.963	136.341	16.117	2.039	154.497	30.3%
1980	39.310	7.527	5.883	40.954	111.835	12.249	1.878	125.962	32.5%
1981	40.030	7.359	5.408	41.981	120.828	12.223	1.743	124.794	31.1%
1982	27.520	4.195	3.721	27.994	74.577	8.499	916	83.992	33.4%
1983	32.808	5.011	3.600	34.219	84.615	9.524	726	94.865	36.0%
1984	34.325	5.624	3.889	36.060	92.528	10.900	940	103.368	34.9%
1985	37.362	5.983	4.527	38.818	88.259	10.126	889	99.274	39.1%
1986	37.123	4.700	3.819	38.004	81.606	8.653	829	91.088	41.8%
1987	42.101	5.736	3.029	44.808	89.151	8.924	830	98.905	45.3%
1988r	47.059	5.505	2.951	49.613	99.924	8.876	1.013	109.813	45.2%
1989	43.560	5.510	3.136	45.934	97.943	7.773	1.137	106.853	43.0%

Sources: U.S. Bureau of Mines, American Iron & Steel Institute

[1] Net Domestic Scrap Consumption: Defined as receipts from dealers & other sources + other receipts – scrap shipments (excludes home scrap)

[2] Apparent Steel Consumption: Defined as raw steel production + foundry shipments + steel castings shipments

[3] Scrap Market Share: Calculated from net domestic consumption (column 5) divided by apparent steel consumption (column 9)

r – revised

Trend of U.S. Steel Production by Furnace
(millions of net tons and by percentage[1])

Year	Basic Oxygen		Electric		Open Hearth	
	Tons	Percentage	Tons	Percentage	Tons	Percentage
1979	83.3	61.1	33.9	24.9	19.2	14.0
1980	67.6	60.4	31.2	27.9	13.1	11.7
1981	73.2	60.6	34.1	28.3	13.5	11.1
1982	45.3	60.7	23.2	31.1	6.1	8.2
1983	52.1	61.5	26.6	31.5	6.0	7.0
1984	52.8	57.1	31.4	33.9	8.3	9.0
1985	51.9	58.8	29.9	33.9	6.4	7.3
1986	47.9	58.7	30.4	37.2	3.3	4.1
1987	52.5	58.9	34.0	38.1	2.7	3.0
1988	58.0	58.0	36.8	36.9	5.1	5.1
1989	58.3	59.6	35.2	35.9	4.4	4.5

Source: American Iron and Steel Institute

[1] Calculated as a percentage of total steel production

U.S. Exports of Ferrous Scrap[1] by Country
(000 net tons)

Country	1984	1985	1986	1987	1988	1989
Canada	736	415	342	308	552	918
Mexico	475	579	302	488	894	546
China	200	383	329	248	30	30
Greece	125	183	177	22	47	154
India	197	590	1,145	857	904	944
Italy	306	294	275	171	74	135
Japan	2,617	2,050	1,663	902	549	356
Korea, Republic of	1,824	1,969	2,972	2,642	2,230	2,727
Spain	578	867	645	401	330	601
Taiwan	393	399	633	401	639	356
Turkey	807	955	1,417	2,253	1,980	323
Venezuela	390	470	483	150	258	82
Other	587	458	997	1,196	1,004	4,226
Total	9,235	9,612	11,380	10,039	9,491	11,398

Source: U.S. Department of Commerce
[1] Excludes Alloy and Stainless Steel Scrap

U.S. Exports of Ferrous Scrap by Grade
(000 net tons)

Grade	1984	1985	1986	1987	1988	1989
Alloy steel scrap	100	133	160	139	363	504
Stainless steel scrap	164	180	164	169	243	292
Total Alloy and Stainless	264	313	324	308	606	796
No. 1 heavy melting scrap	2,512	2,767	2,923	2,431	2,400	2,790
No. 2 heavy melting scrap	879	777	797	588	691	1,050
No. 1 baled steel scrap	77	189	155	182	74	103
No. 2 baled steel scrap	286	290	301	366	371	462
Shredded steel scrap	2,775	2,559	3,495	3,328	2,910	3,854
Borings, shovelings and turnings	800	861	731	556	515743	743
Other steel scrap[1]	1,316	1,070	1,174	1,342	1,252	593
Cut plate and structural[2]	—	434	714	477	427	579
Iron scrap	590	666	1,091	768	852	1,224
Total Iron and Steel Scrap	9,235	9,612	11,380	10,039	9,491	11,398

Source: U.S. Department of Commerce
[1] Includes terneplate and tinplate
[2] Not reported separately prior to 1985

U.S. Imports of Ferrous Scrap, Iron Ore, Pig Iron and Steel Products (millions of net tons)

Year	Scrap[1]	Iron Ore	Pig Iron	Steel
1979	0.8	37.8	0.5	17.5
1980	0.6	28.1	0.5	15.5
1981	0.6	31.7	0.5	19.9
1982	0.5	16.4	0.3	16.7
1983	0.6	14.9	0.2	17.1
1984	0.6	19.2	0.7	26.2
1985	0.6	16.0	0.3	24.3
1986	0.7	16.7	0.3	20.7
1987	0.8	16.6	0.4	20.4
1988	1.0	19.9	0.7	20.9
1989	1.1	19.2	0.5	17.3

Source: U.S. Bureau of Mines, for steel: American Iron and Steel Institute
[1] Includes tinplate
NA—Not available

Purchased Scrap Receipts, Home Scrap Production and Ferrous Scrap Consumption by Grade (000 net tons)

Total-All Types of Manufacturers	1987 Purchased Scrap Receipts[1]	1987 Home Scrap Production	1987 Total Scrap Consumed	1988 Purchased Scrap Receipts[1]	1988 Home Scrap Production	1988 Total Scrap Consumed	1989 Purchsed Scrap Receipts	1989 Home Scrap Produced	1989 Total Scrap Consumed
Grade of Scrap Carbon Steel:									
Low-phosphorus plate and punchings	1,816	337	2,192	2,239	473	2,728	2,213	359	2,611
Cut structural and plate	2,502	465	2,830	2,870	636	3,560	3,531	600	4,145
No. 1 heavy melting steel	9,525	6,343	15,143	9,661	7,414	16,849	7,738	7,299	15,174
No. 2 heavy melting steel	3,551	899	4,383	4,172	981	5,147	3,667	982	4,758
No. 1 and electric furnace bundles	6,042	1,164	6,994	6,037	1,179	7,189	5,646	1,046	6,603
No. 2 and all other bundles	994	74	1,081	1,057	114	1,179	1,044	132	1,164
Electric furnace 1 foot and under	264	30	289	247	30	278	382	23	397
Railroad rails	556	27	583	593	35	622	527	31	559
Turnings and borings	1,043	227	1,301	1,404	219	1,599	1,424	192	1,611
Slag scrap (Fe content 70%)	681	1,962	2,448	842	2,100	2,884	1,426	1,845	3,225
Shredded or fragmentized	6,217	121	6,365	7,660	71	7,682	6,105	74	6,849
No. 1 Busheling	2,557	150	2,639	2,656	128	2,810	2,436	162	2,638
All other carbon steel scrap	3,307	6,138	9,358	3,274	6,286	9,335	3,337	5,156	8,474
Stainless steel scrap	644	497	1,155	790	571	1,361	656	532	1,184
Alloy steel (except stainless)	283	885	1,199	344	892	1,273	321	781	1,097
Ingot mold scrap	403	935	1,378	455	910	1,387	398	928	1,359
Machinery and cupola cast iron	1,039	278	1,287	1,527	499	1,951	1,444	483	1,980
Cast iron borings	960	93	1,046	902	143	1,038	960	179	1,099
Motor blocks	492	922	1,413	567	1,063	1,653	529	725	1,232
Other iron scrap	987	2,644	3,746	1,280	3,183	4,489	896	3,299	4,244
Other scrap	944	549	1,472	1,034	516	1,607	1,254	544	1,806
Total scrap[2]	44,808	24,740	68,303	49,613	27,445	76,822	45,934	25,369	72,209

Source: U.S. Bureau of Mines
[1] Receipts less shipments
[2] Data may not add to shown totals because of sampling differences, estimation procedure revised beginning 1987

No. 1 Heavy Melting Steel Scrap Composite Price[1] (dollars per gross ton)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1979	$ 97.56	110.75	119.75	99.96	97.75	100.83	96.10	90.33	88.08	87.30	92.50	94.10	97.81
1980	99.67	105.00	101.17	92.25	77.50	69.70	76.08	84.42	94.43	95.91	98.50	101.57	91.35
1981	98.58	99.50	105.23	101.75	95.42	89.37	90.17	94.63	90.42	81.17	75.63	76.42	91.53
1982	84.34	82.17	76.84	71.34	62.67	58.04	56.00	55.90	56.17	52.20	51.24	52.59	63.35
1983	61.30	70.00	73.09	71.00	67.70	70.84	71.75	75.04	77.17	77.97	81.42	89.50	73.90
1984	92.70	94.92	91.25	90.17	89.08	85.17	81.90	82.25	85.00	82.90	79.09	79.03	86.12
1985	81.00	83.15	86.75	78.70	70.50	66.34	68.97	74.17	72.43	71.17	68.83	70.23	74.35
1986	73.34	75.50	73.57	72.41	71.50	70.90	71.83	75.10	74.17	73.17	74.17	74.24	73.33
1987	76.00	77.08	74.56	73.17	75.08	77.30	79.58	84.57	94.08	108.92	107.97	99.33	85.17
1988	101.83	112.17	109.50	108.83	102.83	105.17	116.50	116.17	111.50	110.17	106.50	109.17	109.19
1989	115.03	116.08	113.17	113.33	113.30	111.92	104.36	104.50	103.25	99.83	97.17	97.00	107.66

Source: *Scrap Price Bulletin*
[1] Average price of No. 1 heavy melting (low sulfur phosphorus) quotations at Pittsburgh, Philadelphia and Chicago.

No. 2 Bundles Composite Price[1] (dollars per gross ton)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1979	61.56	68.17	73.25	63.43	65.75	67.50	62.76	58.58	57.41	56.76	58.58	61.03	62.89
1980	62.50	67.41	65.90	60.83	53.83	50.70	54.00	62.66	67.90	70.91	72.75	75.23	63.71
1981	71.83	71.83	73.83	75.08	68.08	61.57	61.58	62.50	61.66	56.50	53.43	53.75	64.31
1982	56.50	56.17	51.24	47.58	44.84	42.84	41.84	41.84	41.17	39.42	38.70	38.50	45.05
1983	42.84	48.84	51.84	48.84	46.57	46.34	45.75	45.50	46.57	46.57	49.34	58.17	48.80
1984	59.96	62.50	62.41	61.03	60.16	56.50	51.10	51.16	51.83	51.16	51.09	51.10	55.84
1985	53.00	55.25	57.50	55.24	49.51	47.17	50.04	53.83	53.04	52.25	50.67	50.63	52.34
1986	52.83	53.83	53.56	53.08	52.17	51.77	52.50	53.70	51.67	50.50	50.50	50.50	52.22
1987	51.42	51.17	50.37	49.83	51.09	52.70	54.17	54.03	60.75	71.83	69.77	65.83	56.91
1988	67.17	75.50	73.83	72.50	70.50	70.50	76.83	80.50	76.83	75.50	73.50	73.50	73.89
1989	73.50	77.17	79.50	73.50	73.50	73.17	73.17	71.50	70.17	68.83	68.33	66.50	72.40

Source: *Scrap Price Bulletin*
[1] Average price of No. 2 bundles delivered to consumers at Pittsburgh, Philadelphia and Chicago.

Finished Steel Composite Price[1] (cents per pound)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1979	19.549	19.549	19.549	19.607	19.637	19.668	20.253	20.311	20.311	20.547	20.547	20.547	20.006
1980	20.943	21.038	21.168	21.739	21.739	21.739	21.736	21.736	21.736	21.982	22.019	22.286	21.655
1981	22.901	23.362	23.598	23.776	23.776	24.232	24.488	24.488	24.488	25.195	25.195	25.195	24.224
1982	25.195	25.195	25.195	25.297	25.297	25.297	25.297	25.297	25.297	25.297	25.297	25.297	25.271
1983	25.297	25.978	25.954	25.954	25.954	25.954	25.954	25.954	26.822	26.822	26.822	26.822	26.190
1984	26.822	26.939	26.939	26.939	27.405	27.405	27.582	27.582	27.582	27.582	27.582	27.582	27.313
1985	27.582	27.582	27.582	27.582	27.582	27.582	27.582	27.582	27.582	27.582	27.582	27.582	27.582
1986	24.607	24.607	24.607	24.607	24.709	24.850	24.850	24.854	24.951	24.951	24.951	24.951	24.792
1987	25.236	25.236	25.236	25.236	25.236	25.236	25.236	24.804	24.804	26.002	26.002	26.002	25.356
1988	24.223	24.223	24.223	24.333	24.333	24.333	24.378	24.594	24.594	24.594	24.594	24.594	24.418
1989	24.594	24.738	25.476	25.476	25.476	25.591	25.591	25.591	25.595	25.595	25.595	25.595	25.409

Source: *Scrap Price Bulletin*
[1] Weighted index of steel bars, shapes, wire, rails, black pipe, hot and cold rolled sheet and strips.

Pb

LEAD

Heaviest and softest of the common metals. Silvery-bluish-white, resists corrosion, highly malleable; poor conductor of electricity. Symbol Pb; melting point 327.5° C. Principally used in lead-acid storage batteries and other alloys.

Lead: 10 Year Review
(short tons)

Year	Primary Production	Lead Recovered From Old and New Scrap	Imports (refined only)	Exports (refined only)	Stocks	Stock Changes	Apparent Lead Consumption[1]	Scrap Market Share[2]
1979	637,000	883,000	202,000	12,000	219,000	- 61,000	1,649,000	54%
1980	604,000	745,000	90,000	181,000	200,000	19,000	1,277,000	58%
1981	549,000	707,000	110,000	25,000	224,000	+ 24,000	1,377,000	51%
1982	570,000	630,000	105,000	62,000	188,000	36,000	1,279,000	49%
1983	572,000	550,000	195,000	22,000	170,000	- 18,000	1,313,000	42%
1984	429,000	698,000	180,000	8,000	157,000	- 13,000	1,312,000	53%
1985	545,000	679,000	147,000	30,000	196,000	+ 39,000	1,302,000	52%
1986	408,000	689,000	157,000	14,000	115,000	- 81,000	1,321,000	52%
1987	412,000	783,000	205,000	11,000	121,000	+ 6,000	1,383,000	57%
1988	432,000	812,000	164,000	15,000	116,000	- 5,000	1,398,000	58%
1989[P]	437,000	891,000	128,000	37,000	83,000	- 33,000	1,452,000	61%

Source: U.S. Bureau of Mines

[1] Apparent lead consumption: Defined as primary production + recovered from old and new scrap + net imports + net stock changes.

[2] Lead market share: Calculated from lead recovered from old scrap (scrap) divided by apparent lead consumption (consumption).

[r] Revised

[P] Preliminary

Average Monthly U.S. Producer Prices of Lead[1]
(cents per pound)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1979	40.76	43.63	45.75	48.00	48.81	56.51	58.07	57.91	58.00	61.06	57.26	55.95	52.64
1980	49.88	49.56	49.22	44.02	36.00	34.19	35.60	40.96	42.26	45.00	43.81	38.97	42.46
1981	33.79	30.42	35.06	37.52	36.41	37.97	40.99	43.89	40.32	37.05	33.88	31.07	36.53
1982	29.67	28.70	27.64	26.06	26.09	24.76	27.18	25.82	25.32	23.19	21.61	20.47	25.54
1983	22.03	21.12	20.71	21.17	20.22	19.41	19.32	19.46	21.69	25.38	25.15	24.46	21.68
1984	25.12	24.07	25.03	26.43	25.37	28.16	30.51	28.24	24.18	22.33	25.25	21.89	25.55
1985	19.09	18.82	17.68	19.92	20.11	19.05	18.88	19.10	19.20	18.93	19.05	18.97	19.07
1986	18.35	17.79	18.20	18.73	19.38	22.07	21.94	22.78	23.44	25.55	28.01	28.68	22.08
1987	27.87	26.04	26.00	27.84	34.95	36.93	41.67	41.95	42.00	42.00	42.00	42.00	35.94
1988	38.00	34.85	34.00	34.00	34.57	36.30	36.50	36.52	38.41	39.15	41.36	42.02	37.14
1989	40.17	37.01	35.07	35.02	36.34	39.15	40.29	41.75	43.63	43.63	41.26	38.89	39.35

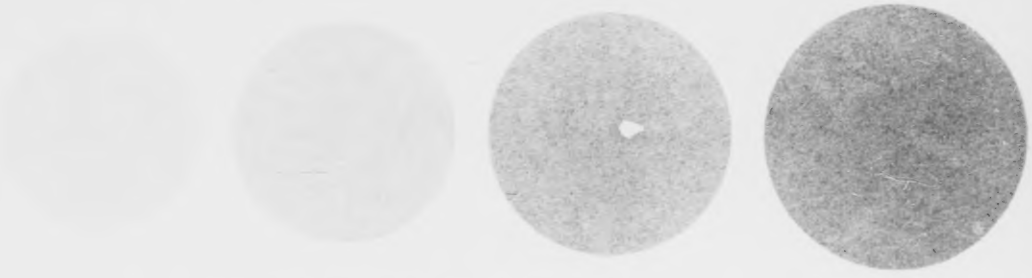
Source: *Metals Week*

[1] Quotations for the U.S. on a nationwide, delivered basis.

Average London Metal Exchange Monthly and Yearly Quoted Prices of Lead (cents per pound)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1979	44.97	47.79	53.32	52.60	56.16	62.63	57.64	54.96	55.77	59.77	55.49	53.33	54.52
1980	50.66	52.93	50.72	43.88	35.49	33.44	36.74	38.65	40.01	39.50	36.89	33.68	41.21
1981	31.95	31.24	33.06	34.38	31.58	32.30	35.55	37.34	34.61	32.47	30.18	30.56	33.30
1982	29.37	28.01	27.75	26.05	26.05	23.59	25.03	23.70	23.35	22.54	20.96	20.30	24.66
1983	21.54	20.61	20.09	20.74	19.63	18.49	18.27	18.04	18.34	19.00	18.34	18.23	19.27
1984	18.01	18.33	20.82	21.83	20.54	21.95	22.37	21.18	18.20	18.67	19.96	18.83	20.12
1985	19.03	16.69	15.95	17.65	17.04	17.64	18.27	18.74	18.15	17.83	17.86	17.67	17.84
1986	16.69	16.64	16.64	16.74	17.06	18.96	17.21	17.77	18.45	19.69	21.45	23.48	18.43
1987	21.02	20.86	22.07	25.17	31.40	28.51	30.06	29.88	29.31	27.25	29.10	29.86	27.04
1988	30.21	29.71	29.39	29.41	30.27	30.68	28.06	27.25	27.63	29.63	31.33	33.12	29.73
1989	30.62	28.17	26.69	27.55	29.15	30.16	31.32	31.31	33.00	34.07	31.39	32.22	30.63

Source: Metals Week



U.S. Lead Scrap Exports by Country (short tons)

Country	1984	1985	1986	1987	1988	1989
Belgium-Luxembourg	380	422	32	726	118	1,292
Brazil	6,461	15,956	17,788	8,035	17,760	3,808
Canada	6,743	4,006	2,910	10,310	13,757	10,462
Colombia	6,227	6,818	3,306	497	—	—
Denmark	474	—	1	—	—	—
Germany, Federal Republic of	997	1,681	848	1,619	3,073	1,784
India	328	496	1,569	684	2,665	6,358
Italy	—	3,889	22	45	31	21
Japan	370	1,698	689	90	132	1,399
Korea, Republic of	1,709	3,365	6,140	4,968	3,525	3,652
Mexico	3,167	2,019	2,788	6,247	12,249	7,799
Netherlands	289	201	535	138	432	3,318
South Africa, Republic of	—	—	—	224	2,968	964
Taiwan	14,914	19,028	23,907	9,869	11,063	1,066
Trinidad & Tobago	3,903	75	—	—	—	—
United Kingdom	726	1,800	3,335	6,365	7,194	2,439
Venezuela	1,093	4,120	3,364	5,164	7,685	814
Other	1,929	508	1,107	2,804	7,413	13,703
Total[1]	49,710	66,082	68,340	57,785	90,064	57,209

Source: Department of Commerce.
[1] Data may not add to totals shown because of independent rounding.

NICKEL

Hard, malleable, ductile, silvery-white metallic element. Symbol Ni; melting point, 1,453° C. Used in stainless steel and in other corrosion-resistant alloys; in coinage, electroplating and as a catalyst.

Nickel/Stainless Steel: 10 Year Review
(net tons)

Year	Receipts From Brokers, Dealers & Other Sources	Receipts From Other Own Companies	Domestic Shipments of Scrap	Apparent Scrap Consumption[1]	Stainless Steel Shipments	Scrap Market Share[2]
1979	425,000	50,000	69,000	406,000	1,361,000	30%
1980	383,000	38,000	58,000	363,000	1,127,000	32%
1981	428,000	40,000	37,000	431,000	1,163,000	37%
1982	402,000	35,000	31,000	406,000	894,000	45%
1983	492,000	19,000	31,000	480,000	1,137,000	42%
1984	528,000	49,000	28,000	549,000	1,248,000	44%
1985	558,000	23,000	24,000	557,000	1,251,000	45%
1986	552,000	22,000	31,000	543,000	1,187,000	46%
1987	642,000	24,000	22,000	644,000	1,418,000	45%
1988	788,000	21,000	19,000	790,000	1,586,000	50%
1989[p]	656,000	23,000	20,000	659,000	1,472,000	45%

Source: U.S. Bureau of Mines, AISI

[1] Apparent Scrap Consumption: Defined as receipts from brokers, dealers and other sources + receipts from other own companies − scrap shipments to outside home plants

[2] Scrap Market Share: Calculated from apparent scrap consumption (column 5) divided by stainless steel shipments (column 6)

[p] Preliminary

Average Nickel Price—New York Dealer/Cathode (cents per pound)

Month	1987	1988	1989
January	1.70	3.79	7.92
February	1.73	3.89	8.33
March	1.77	6.16	7.72
April	1.82	7.86	6.83
May	2.10	7.72	6.10
June	2.17	7.00	5.42
July	2.26	6.64	5.49
August	2.47	6.55	5.82
September	2.48	5.21	5.06
October	2.63	5.13	4.70
November	2.73	5.72	4.45
December	3.47	7.42	3.94
Average	2.28	6.09	5.96

Source: Metals Week

Average Nickel Price on the London Metal Exchange (cents per pound)

Month	1987	1988	1989
January	1.60	3.66	8.04
February	1.69	3.93	8.40
March	1.71	7.03	7.78
April	1.77	8.17	6.92
May	2.01	7.72	6.10
June	2.01	7.07	5.51
July	2.16	6.62	5.57
August	—	6.43	5.86
September	—	5.39	5.09
October	2.58	5.34	4.73
November	—	6.05	4.44
December	3.47	7.68	4.00
Average	2.19	6.25	6.04

Source: Metals Week

U.S. Exports of Stainless Steel by Country (net tons)

Country	1984	1985	1986	1987	1988	1989
Canada	14,145	7,509	6,614	12,853	27,447	23,928
Belgium	25,054	17,397	20,794	11,850	7,189	7,080
Brazil	—	18	694	3,452	151	600
Germany, Federal Republic of	16,592	23,799	2,990	2,794	14,853	15,293
India	2,666	5,017	6,701	1,916	1,626	4,817
Italy	—	7,638	350	4,067	6,872	7,315
Japan	51,686	46,897	52,860	57,771	72,812	76,425
Korea	2,486	7,759	10,457	1,322	10,957	58,536
Netherlands	14,204	25,353	26,573	16,995	9,000	16,664
Spain	29,884	27,222	15,407	39,840	67,396	51,491
Sweden	3,290	3,791	13,668	5,438	10,882	8,496
Taiwan	833	472	2,287	4,257	5,997	5,580
Other	2,702	6,711	4,725	6,046	8,162	15,382
Total	163,542	179,583	164,120	168,601	243,344	291,607

Source: Department of Commerce

Zn

Z I N C

A lustrous, bluish-white metallic element. Symbol Zn; melting point, 419.47° C. Used in many alloys including brass, bronze, nickel silver, and other metals to protect them against corrosion.

Zinc: 10 Year Review (short tons)

Year	Domestic Old & New Scrap Consumption	Reported/ Apparent Zinc Consumption[1]	Scrap Market Share[2]
1979	224,546	1,102,968	20%
1980	201,764	894,126	23%
1981	223,858	926,897	24%
1982	188,272	782,072	24%
1983	226,044	888,334	25%
1984	264,203	935,746	28%
1985	240,803	1,036,823[3]	23%
1986	227,132	1,100,799	21%
1987	249,081	1,159,620	21%
1988	212,570	1,200,405	18%
1989	227,152	1,171,744	19%

Source: U.S. Bureau of Mines

[1] Reported Apparent Zinc Consumption: Defined as primary production + old & new scrap consumed + net trade + stock change.

[2] Scrap Market Share: Calculated from old & new scrap consumed (column 2) divided by reported apparent zinc consumption (column 3).

[3] After 1985 Apparent Consumption.

Zinc Scrap Exports by Country (short tons)

Country	1984	1985	1986	1987	1988	1989
Belgium	5,388	6,122	7,694	4,396	2,559	838
Canada	938	798	827	2,542	1,503	429
Dominican Republic of	—	—	—	25	—	97
Finland	—	4,652	—	—	—	—
France	860	25	471	—	—	649
Germany, Federal Republic of	3,880	1,711	1,404	485	289	244
India	1,615	1,997	2,646	2,055	1,137	2,024
Japan	3,951	4,535	404	627	542	868
Korea, Republic of	1,143	2,094	3,172	1,164	4,363	2,200
Mexico	—	164	81	—	36	68
Netherlands	21	414	272	19	157	—
Spain	132	104	141	—	—	44
Taiwan	13,118	19,152	52,222	78,143	91,990	92,011
United Kingdom	422	452	278	352	463	7,729
Venezuela	19	—	—	20	—	—
Other	404	324	47	987	1,786	359
Total	31,890	42,544	69,659	90,815	104,825	107,560

Source: Department of Commerce

Average Monthly U.S. Zinc Price (cents per pound)

Month	1979	1980	1981	1982[1]	1983[1]	1984[1]	1985[1]	1986[1]	1987[1]	1988[1]	1989[1]
January	34.57	37.44	41.19	42.17	38.61	49.22	42.94	32.87	41.40	44.44	79.27
February	35.62	37.50	41.25	42.72	38.62	50.61	42.65	30.88	38.38	45.44	87.70
March	37.24	38.00	41.30	39.23	37.90	51.07	43.20	31.22	37.70	47.90	93.71
April	38.99	38.01	42.56	35.51	38.00	51.90	44.80	32.13	38.19	51.50	88.05
May	39.39	37.50	45.20	34.67	38.11	52.77	45.12	32.97	42.23	56.04	84.64
June	39.39	36.44	46.12	34.60	39.46	52.45	43.73	36.54	45.05	62.55	80.59
July	39.40	35.50	46.25	35.66	40.01	49.52	41.44	39.55	45.67	65.64	79.67
August	36.90	35.73	47.47	37.79	40.56	47.85	39.84	40.83	44.43	66.46	81.32
September	35.80	36.63[1]	48.72	39.64	42.98	46.42	37.86	43.70	42.59	68.26	81.08
October	36.21	37.27[1]	45.87	40.83	46.11	44.19	35.76	45.98	41.75	69.45	79.95
November	36.82	38.58[1]	46.15	40.39	47.55	43.60	33.36	45.78	42.38	71.25	75.92
December	37.23	40.55[1]	42.59	38.46	48.74	43.62	33.61	43.51	43.31	73.44	72.33
Average	37.30	37.43	44.56	38.47	41.39	48.60	40.37	34.43	41.92	60.20	82.02

Source: Metals Week
[1] Based on High Grade Zinc

Zinc London Metal Exchange Cash Price (cents per pound)

Month	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
January	32.64	35.03	35.22	37.10	31.68	43.41	39.20	29.18	34.43	39.81	78.57
February	35.92	39.39	33.11	37.30	30.88	45.26	40.14	27.58	33.56	39.72	87.54
March	36.00	33.64	34.33	35.78	30.75	47.16	41.70	28.35	33.16	44.50	88.89
April	35.74	32.04	37.31	33.65	31.61	45.52	42.14	29.10	34.53	48.46	75.04
May	35.28	31.31	38.56	34.01	33.34	45.38	39.87	32.06	38.01	53.33	73.78
June	34.13	30.71	38.06	31.33	32.56	42.67	36.56	36.45	39.80	61.87	69.72
July	32.69	32.32	39.21	32.80	33.54	38.70	34.70	36.58	37.59	56.08	73.22
August	30.12	34.83	43.28	32.43	36.67	37.81	33.29	37.01	36.44	59.35	78.28
September	32.79	36.07	42.57	33.97	37.98	38.31	31.24	39.48	34.28	60.30	73.77
October	32.00	36.49	40.41	34.06	38.93	38.09	28.62	40.17	34.89	68.85	71.79
November	31.76	36.33	38.74	32.18	38.97	38.67	27.06	37.17	38.42	70.63	65.10
December	33.98	35.50	38.31	30.30	38.85	38.87	31.05	36.18	39.25	72.24	65.79
Average	33.59	34.47	38.34	33.74	34.73	40.76	36.23	34.18	36.25	51.11	75.12

Source: Metals Week

Au

GOLD

A heavy, soft, yellow, ductile, malleable metallic element. Symbol Au; melting point, 1,063° C. Commonly alloyed with varying percentages of copper, silver, nickel and palladium.

U.S. Refinery Production of Gold: 10 year Review
(000 troy ounces)

Raw Material Concentrates and Ore:	1979	1980	1981	1982	1983	1984[r]	1985[r]	1986[r]	1987[r]	1988	1989
Domestic	795	773	801	718	885	2,101	2,076	2,431	3,613	4,431	5,905
Foreign	83	14	4	[1]	7	—	—	[1]	[1]	[1]	—
Old Scrap[2]	1,675	2,184	1,610	1,444	1,380	1,769	1,602	1,520	2,053	1,698	1,186
New Scrap	1,208	1,640	1,475	1,596	1,590	1,543	1,510	1,633	1,277	2,416	3,875
Total	3,761	4,612	3,890	3,760	3,863	5,413	5,188	5,584	6,943	8,545	10,966

Source: U.S. Bureau of Mines

[1] Foreign figures included with Domestic.

[2] Excludes upgrading of U.S. Government-owned gold by the U.S. Assay Office. Refining activity terminated in September 1981.

[r] = Revised.

Average Gold Price—Comex 1st Position
(dollar per troy ounce)

Month	1986	1987	198	1989
January	345.71	409.11	476.14	403.70
February	338.67	401.55	441.42	389.24
March	345.86	409.23	444.42	390.31
April	341.30	439.63	452.79	385.17
May	342.51	460.99	452.12	372.51
June	342.96	449.59	451.16	369.91
July	349.69	451.45	437.75	375.80
August	376.94	459.89	431.50	366.47
September	419.39	459.60	411.75	363.26
October	423.55	465.51	407.14	367.67
November	397.51	468.32	420.79	395.49
December	391.85	486.03	418.98	409.05
Average	367.99	446.74	437.16	382.38

Source: Metals Week

Gold Price on the London Metal Exchange (Final)
(dollar per troy ounce)

Month	1986	1987	1988	1989
January	345.38	408.26	476.58	404.01
February	338.89	401.11	442.07	387.51
March	345.70	408.91	443.61	390.15
April	340.44	438.35	451.55	384.40
May	342.38	460.23	451.07	371.05
June	342.72	449.59	451.33	367.60
July	348.34	450.52	437.63	375.04
August	376.59	461.14	431.28	365.14
September	417.73	460.35	413.46	361.75
October	423.51	465.35	406.78	366.88
November	397.55	467.57	420.17	394.26
December	390.92	486.24	419.05	409.39
Average	367.51	446.47	437.05	381.43

Source: Metals Week

Ag

SILVER

A white metallic element. Ductile, very malleable, and capable of a high degree of polish. Symbol Ag; melting point, 960.8° C. Used for coin, jewelry, etc.

U.S. Refinery Production of Silver: 10 year Review
(000 troy ounces)

Raw Material	1980	1981	1982	1983	1984	1985	1986'	1987'	1988	1989
Concentrates and Ores:										
Domestic	36,171	44,487	43,825	50,281	59,331	53,808	42,413	45,480	47,402	55,234
Foreign	3,182	2,520	344	169	—	—	—	—	—	—
Total	39,353	47,007	44,170	50,450	59,331	53,808	42,413	45,480	47,402	55,234
Old Scrap	53,131	39,067	27,171	25,549	27,842	27,830	24,494	26,034	27,397	23,630
New Scrap	65,642	44,738	37,812	41,839	42,091	44,643	46,563	42,319	48,426	48,065
Grand Total	158,127[1]	130,812[1]	109,153[1]	117,838[1]	129,264	126,281[1]	113,470	113,833	123,225	126,929

Source: U.S. Bureau of Mines

[1] Data may not add up to totals shown due to independent rounding

Average Silver Price—Comex 1st Position
(cents per troy ounce)

Month	1986	1987	1988	1989
January	606.68	553.72	672.98	597.71
February	585.55	548.46	633.16	587.41
March	563.54	569.90	643.40	594.07
April	522.36	736.43	645.65	578.24
May	510.93	843.53	654.55	543.53
June	514.97	742.57	703.12	528.04
July	505.06	772.04	711.65	522.84
August	521.18	780.55	669.83	517.56
September	569.37	760.68	634.92	513.65
October	567.13	756.01	628.73	513.73
November	556.80	670.83	627.88	548.77
December	536.66	679.17	612.54	552.26
Average	546.69	701.16	653.20	549.82

Source: Metals Week

Average Silver Price—London Metal Exchange Cash
(cents per 10,000 ounce contracts)

Month	1986	1987	1988	1989
January	602.73	552.01	670.53	596.94
February	585.45	548.23	631.13	587.54
March	562.98	565.23	637.99	594.24
April	519.82	742.99	642.28	579.50
May	506.10	845.12	651.35	544.15
June	513.12	741.72	698.40	528.34
July	501.01	762.72	707.60	524.32
August	519.72	785.85	668.15	517.61
September	563.24	758.89	633.55	513.50
October	561.67	763.29	625.54	514.32
November	556.57	669.12	626.64	548.26
December	537.00	679.76	609.80	557.15
Average	545.06	701.24	650.24	550.49

Source: Metals Week

PGMS

Silvery-white, metallic elements include platinum (Pt), palladium (Pd), ruthenium (Ru), rhodium (Rh), osmium (Os), and iridium (Ir). Characterized by high specific gravity, unusual resistance to oxidizing and acidic attack; high melting points.

Platinum-Group Metals (PGMs) Nontoll Refined in the U.S.: 10 Year Review (troy ounces)

Year	Platinum	Palladium	Iridium	Osmium	Rhodium	Ruthenium	Total
1979	75,038	220,639	1,647	—	7,964	3,734	309,022
1980	154,075	162,408	3,186	13	10,106	1,135	330,923
1981	187,883	185,764	3,318	64	11,317	3,291	391,637
1982	190,249	139,286	2,896	—	11,302	427	344,160
1983	118,579	177,816	2,357	—	3,663	750	303,165
1984	89,702	243,347	735	27	3,668	2,047	339,526
1985[1]	52,383	201,362	252	—	3,126	1,474	258,597
1986[1]	70,867	277,366	297	—	4,316	1,313	354,159
1987[1]	37,939	120,351	115	604	3,944	1,567	164,520
1988[1]	36,413	113,974	132	—	3,337	61	153,917
1989	36,942	85,843	193	—	3,023	1,126	127,124

Source: U.S. Bureau of Mines.
[1] Typically, about 99.8% of the platinum and 99% of the palladium are secondary metal; the other metals are entirely secondary.

Platinum-Group Metals (PGMs) Toll Refined in the U.S.: 10 Year Review (troy ounces)

Year	Platinum	Palladium	Iridium	Osmium	Rhodium	Ruthenium	Total
1979	585,932	446,189	5,487	—	38,875	13,719	1,090,202
1980	533,101	498,905	4,933	1,371	33,362	7,340	1,079,012
1981	520,717	607,397	7,826	1,865	34,870	18,471	1,191,146
1982	393,832	430,564	10,108	885	26,693	6,301	868,383
1983	433,700	456,732	5,820	925	41,624	55,788	994,589
1984	524,158	568,489	7,826	49	37,584	19,288	1,157,394
1985[1]	490,595	490,648	7,007	3	36,336	13,356	1,038,245
1986[1]	674,412	398,270	3,584	1,415	57,618	19,701	1,155,000
1987[1]	725,961	616,311	3,269	796	60,930	37,430	1,444,697
1988[1]	735,738	672,703	8,095	619	58,707	16,043	1,491,904
1989	773,482	664,204	7,042	33	50,316	11,993	1,487,067

Source: U.S. Bureau of Mines.
[1] Typically, about 99.8% of the platinum and 99% of the palladium are secondary metal; the other metals are entirely secondary.

Average Palladium Price—New York Dealer (dollar per troy ounce)

Month	1986	1987	1988	1989
January	102.43	122.75	123.66	134.95
February	100.95	119.50	118.90	141.05
March	110.10	122.50	121.44	145.07
April	106.77	135.93	121.50	166.25
May	107.74	144.70	122.10	152.36
June	110.19	136.71	127.46	152.46
July	111.23	139.50	124.50	149.95
August	128.31	140.00	122.98	133.61
September	140.14	135.71	119.62	136.75
October	134.84	129.24	120.68	136.98
November	121.94	111.21	125.48	138.14
December	116.89	120.59	131.14	136.98
Average	115.96	129.95	123.28	143.71

Source: Metals Week

Average Platinum Price—New York Dealer (dollar per troy ounce)

Month	1986	1987	1988	1989
January	364.95	515.00	491.58	527.50
February	373.16	514.63	451.85	529.90
March	413.33	525.23	491.17	534.30
April	417.45	584.50	523.33	538.00
May	411.48	605.00	544.52	514.96
June	432.38	565.27	576.36	494.18
July	439.23	568.30	543.75	500.00
August	536.81	608.34	529.13	482.96
September	595.24	586.33	506.24	476.45
October	570.68	564.48	522.10	483.10
November	510.39	494.21	566.50	504.19
December	474.00	499.50	567.38	501.75
Average	461.59	552.57	525.33	507.27

Source: Metals Week

PAPER STOCK

Waste papers, sorted or segregated into various recognized grades. Used as a principal ingredient in the manufacture of certain types of paper and papberboard.

Paper and Paper Stock: 10 Year Review (000 short tons)

Year	Paper and Paperboard Production	Reported Paper Stock Consumption	Paper Stock Market Share[1]
1979	64.345	15.820	25%
1980	63.600	15.394	24%
1981	64.259	15.518	24%
1982	60.958	14.920	25%
1983	66.761	16.122	24%
1984	70.268	17.183	25%
1985	68.833	16.850	25%
1986	72.689	18.428	25%
1987	74.433	19.201	26%
1988	76.662	20.388	27%
1989	77.058	21.398	28%

Source: American Paper Institute
[1] Paper Stock Market Share: Calculated from reported paper stock consumption (column 3) divided by paper and paperboard production (column 2).
r = Revised

Paper Stock Consumption (000 short tons)

Year	Mixed Grades	Newspapers[1]	Corrugated	Pulp Subs.	High Grade Deinking	Total All Grades[1]
1979	2.648.0	2.780.0	6.967.0	2.308.0	1.117.0	15.820.0
1980	2.268.0	2.864.0	6.866.0	2.254.0	1.142.0	15.394.0
1981	2.233.0	2.852.0	6.910.0	2.307.0	1.216.0	15.518.0
1982	1.707.0	2.973.0	6.770.0	2.247.0	1.223.0	14.920.0
1983	1.908.0	2.992.0	7.443.0	2.456.0	1.323.0	16.122.0
1984	1.974.5	3.194.8	7.971.7	2.673.4	1.368.6	17.183.0
1985	1.901.5	3.175.0	7.899.5	2.493.7	1.380.4	16.850.1
1986	2.044.5	3.417.8	8.633.6	2.761.5	1.570.3	18.427.7
1987	2.116.2	3.442.5	9.176.7	2.902.8	1.562.9	19.201.1
1988r	2.182.3	3.715.4	9.909.4	2.890.3	1.690.2	20.387.6
1989	2.239.7	3.836.8	10.522.0	2.922.6	1.876.4	21.397.5

Source: American Paper Institute
[1] Includes estimate for non-paper paperboard uses.
r = Revised

U.S. Exports of Paper Stock by Grade (short tons)

Year	Newspapers	Old Paperboard	Corrugated Paper and Substitutes	High Grade Pulp Paper, n.e.c.[1]	Total
1980	424,864	1,208,690	381,323	649,395	2,664,272
1981	425,060	991,115	322,511	473,863	2,212,549
1982	439,131	886,655	304,139	497,125	2,127,050
1983	461,218	993,436	414,279	704,783	2,573,716
1984	539,431	1,260,845	549,687	885,478	3,235,441
1985	625,631	1,310,876	469,594	879,825	3,285,926
1986	766,087	1,529,722	759,205	693,697	3,748,711
1987	870,240	1,921,679	892,313	738,104	4,422,336
1988	1,008,664	2,277,166	1,469,453	884,835	5,640,118
1989	829,459	2,695,368	1,556,030	899,798	5,980,655

Source: American Paper Institute
[1] n.e.c. Not elsewhere classified

Seven Largest Consuming Countries of U.S. Paper Stock Exports (000 short tons)

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Canada	451	357	271	347	326	209	226	287	332	285
Italy	199	114	82	56	—	166	154	140	269	222
Japan	201	84	106	266	309	301	399	660	608	530
Korea	408	518	512	567	773	676	839	939	1,226	1,231
Mexico	588	346	236	427	459	457	580	781	1,133	102
Spain	—	—	—	—	95	140	134	130	170	243
Taiwan	370	386	462	545	226	158	892	895	891	1,169
Venezuela	116	129	129	100	113	—	—	—	67	80
Other	330	279	329	276	439	578	524	591	845	2,119
Total[1]	2,664	2,213	2,127	2,574	3,235	3,286	3,749	4,422	5,640	5,981

Source: American Paper Institute
[1] Data may not add to totals shown due to independent rounding

ISRI, INC.

The Institute of Scrap Recycling Industries, Inc. (ISRI) was founded on June 9, 1987, by the merger of the Institute of Scrap Iron and Steel, Inc., and the National Association of Recycling Industries, Inc., and the National Association of Recycling Industries, Inc. The 1,300 member firms that belong to the association are processors, brokers and consumers of scrap commodities—ferrous and nonferrous metals, paper, and plastic—and suppliers of equipment and services to our industry.

FACTS
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